

AMENDMENTS TO THE DRAWINGS

Applicant attached herewith Replacement Sheet, including Figures 3b and 3c.

REMARKS

Claims 1-4, 6, 7 and 9-17 are pending in this application. By this Amendment, the drawings, specification and claims 1, 2, 16 and 17 are amended. No new matter is added. Reconsideration and allowance of this application are respectfully requested.

OBJECTIONS TO THE DRAWINGS

The Examiner has objected to the drawings under 37 C.F.R. § 1.83(a) as each feature must be shown in the drawings. Specifically, the Examiner stated that the feature of “duct adapted to supply agents”, as recited in claims 3, 6, 13 and 15 must be shown or the features canceled from the claims.

Applicant submits that Figs. 1 and 2 adequately describe the feature of the “duct”. Specifically, it is submitted that reference character “2” represents the connecting duct for incoming raw gas. Support may be found on page 2, lines 31-35 in the substitute specification. Thus, withdrawal of the objection is respectfully requested.

The Examiner has objected to the drawings as failing to comply with 37 C.F.R. §1.84(p)(4) as reference character “12” has been used to designate both “the hot zone” and “the intermediate zone”.

Applicants submits that Figs. 1-3 adequately depict reference character “12” as the hot zone and reference character “14” as the intermediate zone. For example, the hot zone may be the area near the heating element 8, and the intermediate zone, which reduces the temperature of the gases, may be the zone adjacent to the hot zone. Thus, withdrawal of the objection is respectfully requested.

OBJECTIONS TO THE SPECIFICATION

The Examiner objected to the specification due to informalities. Applicant has amended the substitute specification, particularly pages 2 and 3, to obviate the objection. Withdrawal of the objection is respectfully requested.

CLAIM REJECTIONS – 35 U.S.C. § 112, 1ST PARAGRAPH

Claims 1-4, 6-7 and 9-17 are rejected under 35 U.S.C. § 112, 1st paragraph, as failing to comply with the written description requirement. Specifically, the Examiner asserts that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time of the application was filed, have possession of the claimed invention. Applicant respectfully traverses the rejection.

In regard to claim 1, Applicant submits that all of the "zones" are adequately described in the specification. For example, page 3, lines 5-10 in the substitute specification describes that the catalytical active zones 10 and 11 are separated from the hot zone 12 by at least one intermediate zone 14.

With regard to claim 3, the feature of the ducts is described in page 2, lines 35-36, for example.

In regards to claims 9-12 and 15, Applicant submits that page 3, lines 5-11 and lines 18-29 adequately described the subject matter in the claims. Moreover, Applicant has included Figs. 3b and 3c for clarification. No new matter is added as Figs. 3b and 3c are illustration of claims 9-12 and 15.

Reconsideration and withdrawal of the rejections are respectfully requested.

CLAIM REJECTIONS- 35 U.S.C. § 112, 2ND PARAGRAPH

Claims 1-4, 6, 7 and 9-17 are rejected under 35 U.S.C. § 112, 2nd paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant submits that each of the rejections under 35 U.S.C. § 112, 2nd paragraph has been addressed in the previous rejection under 35 U.S.C. § 112, 1st paragraph. Thus, reconsideration and withdrawal of the rejection are respectfully requested.

CLAIM REJECTIONS - 35 U.S.C. § 102

Claims 1, 2, 11, 12, 16 and 17 are rejected under 35 U.S.C. § 102(b) as being anticipated by Bayer et al. ("Bayer"), U.S. Patent 5,262,131. This rejection is respectfully traversed.

Applicant submits that Bayer fails to disclose or suggest an equipment for purification of gases, comprising, *inter alia* "said matrix adapted to heat the gas in a regenerative high temperature process to oxidation or self-decomposition temperature and a catalytic process", as recited in claim 1.

Instead, Bayer is directed to only a catalytic process, and thus, does not disclose both the catalytic and hot zone for self-decomposition in the same equipment. In fact, Bayer teaches that the catalytic layers 36 and 38 are designed so as to be a supplement to the regenerative heat transfer material so that heat loss is reduced substantially and comparative to a normal catalyst.¹

¹ See column 2, lines 11-18, and column 1, line 68 - column 2, line 3.

Moreover, Applicant submits that Bayer fails to disclose or suggest, “said intermediate matrix zone has a temperature reducing effect on said gases prior to entering the catalytic zone”, as recited in claim 1.

Column 3, lines 67- column 4, line 9, etc. of Bayer discloses:

[i]t is preheated as it rises through bed 32, and some oxidation reaction will occur in the catalyst layer 36, especially at the pellet surfaces in contact with the gravel layer 40, i.e., close to the heating coil 42. The air passing through the central gravel region 40 continues to be heated, however, by the coil 42 and thereby reaches maximum temperature substantially as it enters the upper catalyst layer 38, where most of the oxidation occurs. This sequence is, of course, reversed in the alternative mode of operation, where the air flow is downward through the casing.

In other words, Bayer discloses that the oxidation takes place in the catalyst layers 36 and 38, and the temperature is regulated in at least one of the catalyst. Accordingly, the gases reach the highest temperature when entering the upper catalyst layer 38 where most of the oxidation occurs. That is, the maximum temperature enters the upper catalyst layer 38 in Bayer, rather than reducing the temperature of the gas prior to entering the catalyst layer.

For at least these reasons, claim 1 is patentable. Claims 11 and 12, which depend from independent claim 1 are also patentable by virtue of their dependency.

With regards to claims 2, 16 and 17, these claims are also allowable due to the similar reasons discussed above with regard to claim 1.

Because Bayer fails to disclose each and every of the claimed invention, it cannot provide a basis for a rejection under 35 U.S.C. § 102. Withdrawal of the rejection is respectfully requested.

CLAIM REJECTIONS - 35 U.S.C. § 103

Claims 1-4, 6, 7, and 9-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gribbon (USP 5,589,142) in view of Bayer. This rejection is respectfully traversed.

Applicant submits that Gribbon and Bayer, individually or in combination, fail to disclose or suggest an equipment for purification of gases comprising, *inter alia*, “said matrix adapted to heat the gas in a regenerative process to oxidation or self-decomposition temperature and a catalytic process....said intermediate matrix zone has a temperature reducing effect on said gases prior to entering the catalytic zone”, as recited in claim 1.

Applicant submits that Bayer is patentable for at least the reasons discussed above. Nonetheless, Applicant traverses the rejection based on Gribbon for at least the following reasons.

In the Office Action, the Examiner admits that Gribbon fails to disclose a matrix having at least three zones in which the catalyst is separated from a combustion zone by an intermediate matrix zone. However, the Examiner attempts to overcome the admitted deficiencies of Gribbon by arguing that Bayer teaches the above missing features. However, Applicant respectfully disagrees.

The Examiner allegedly asserted that “the catalyst zone 22, 24 being separated from the hot zone 28 by distance which is considered an intermediate zone”.² However, Applicant submits that Gribbon fails to explicitly teach or suggest “an intermediate zone”. The area to which the Examiner alludes is considered a “hot zone”, and cannot be considered an intermediate zone which has a temperature reducing effect. That is, the hot zone 28 situated between the catalytic zone 22 and 24 (see Fig. 1) is merely a combustion zone having a temperature of at least the temperature of oxidation. In fact, Gribbon discloses that the combustion chamber 26 having a high temperature immediately reacts with the catalyst 22 and 24.³ Thus, Gribbon fails to disclose or suggest the feature of the “intermediate matrix zone having a temperature reducing effect on the gases prior to entering the catalytic zone”, as recited in claim 1.

Moreover, the alleged combination of Gribbon and Bayer would not be sufficient to render the claims *prima facie* obvious. For example, Gribbon discloses that “the reduction reaction frequency occurs at a temperature ranging from 500 °F to 700 °F in the presence of a selective catalyst”.⁴ Because the arrangement according to Gribbon utilizes a catalyst, the temperature will most likely cannot reach over 700 °F, and hence no self-combustion temperature level can be reached. Accordingly, there is no need for an intermediate temperature lowering zone to be provided in the arrangement of Gribbon. With regard to Bayer, as discussed above, it is submitted that the equipment of Bayer is operating at a relative low oxidation temperature by which temperatures which are necessary for self-decomposition to take place will never be reached.

Absent such a *prima facie* case of evidence, there would not have been any motivation to combine the references of Gribbon and Bayer in the manner as suggested by the Examiner.

Further, the Examiner uses *impermissible hindsight* reconstruction to reject the features cited in claim 1. That is, the Examiner’s assertion that “it would have been obvious

² See Final Office Action, page 7, third paragraph.

³ See Gribbon, column 3, lines 4-7.

to one of ordinary skill in the art to alternatively select an appropriate bed for the system, such as the one taught by Bayer et al. in the apparatus of Gribbon, since both types are regenerative bed or conventional in the art and no cause for patentability here⁵, is not evidence for obviousness. Applicant disagrees with the Examiner's reasoning, and submits that the mere possibility that one reference could be used in another is not sufficient evidence of a suggestion or motivation to combine the references. Applicant submits that the Examiner has used the present application as a blue print, selected a conventional regenerative catalytic oxidizer as a main structure device, and then searched other prior art for the missing features without identifying or discussing any specific evidence or motivation to combine, other than providing conclusory statements regarding the knowledge in the art, motivation, and obviousness. The Federal Circuit has noted that the PTO and the courts cannot use "hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention", In re Fine, 5 USPQ2d 1780 (Fed. Cir. 1988), and that the best defense against the hindsight based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. Thus, Applicant submits that the Examiner has failed to provide proper evidence of motivation for combining the teachings of Gribbon and Bayer.

For at least these reasons, Applicant submits that claim 1 is allowable. Claims 2, 16 and 17 are also allowable for the similar reasons discussed above with regard to claim 1. Dependent claims 3, 4, 6, 8 and 9-15 are allowable by virtue of their dependency on independent claims 1, 2, 16 and 17. Reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

In view of the above, Applicant earnestly solicits reconsideration and allowance of all of the pending claims.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant hereby petitions for three (3) months extension of time for filing a reply to the Office Action and submit the required \$1020.00 extension fee herewith.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the telephone number of the undersigned below.

⁴ See Gribbon, column 1, lines 45-50.

⁵ See Final Office Action, page 7, fourth paragraph.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,
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JAC/DJC:lmg

Attachment: Replacement Sheet: Figs 3b and 3c